



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,735	09/23/2003	Ronald D. Provow	58727US002	1778

32692 7590 08/10/2005

3M INNOVATIVE PROPERTIES COMPANY
PO BOX 33427
ST. PAUL, MN 55133-3427

EXAMINER

MARCHESCHI, MICHAEL A

ART UNIT	PAPER NUMBER
----------	--------------

1755

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/668,735

Applicant(s)

PROVOW ET AL.

Examiner

Michael A. Marcheschi

Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/18/05 (compliant amend filed 5/20/05).
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 6-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 10-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/18/05, 11/19/05, 3/22/05, 4/22/05
7 5/12/05
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. 7/13/04
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Applicants did **not** argue the restriction and therefore this requirement is made **final**.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "120" and "122" have both been used to designate the abrasive composites (see pages 3 and 12). **Although an amendment to page 12 has been submitted, page 12, line 13 still defines abrasive composites 122.**

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are also objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "122" has been used to designate both "abrasive composite" (page 12, line 13) and the "base" (page 20). **Although an amendment to page 12 has been submitted, page 12, line 13 still defines abrasive composites 122.**

Art Unit: 1755

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

**THE INDICATION OF ALLOWABLE SUBJECT MATTER DEFINED IN THE
PREVIOUS OFFICE ACTION IS HEREBY WITHDRAWN IN VIEW OF THE NEW
REJECTIONS BELOW (NECESSITATED BY THE IDS FILED 5/12/05).**

PREVIOUS ART REJECTIONS:

Claims 18-21 are rejected under 35 U.S.C. 102 (b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Bruxvoort (980 A1).

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bruxvoort (980 A1).

Art Unit: 1755

NEW REJECTIONS MADE IN VIEW OF IDS FILED 5/12/05, WITH REQUIRED FEE.

Claims 1-5 and 10-38 are rejected under 35 U.S.C. 103(a) as obvious over Neff (099) in view of Hoopman (097).

Neff (099) teach in column 3, lines 42-44, column 4, lines 23-26 and column 11, lines 20-30, an abrasive article having a plurality of abrasive features (structures) bonded to a backing, wherein the features form a positive rake angle. The features are defined as conical shape, however, column 11, lines 20-30 states that as an alternative embodiment, that the abrasive structures can be any shape and can include abrasive particles bound together by a resin, wherein the abrasive features are produced using a tool.

Hoopman teaches in the abstract, column 5, lines 10-15 and column 9, lines 38-column 17, line 68, an abrasive article (can be in the form of a belt) comprising a backing and a plurality of abrasive/binder features thereon, wherein the features can be any convenient shape (3 or 4 surfaces), as well as truncated shapes. The features are produced using a tool. The articles can be used to abrade wood (see column 23, lines 50+).

The teaching of the primary reference in column 11, defined above, make obvious a structure having at least three sides (as well as other shapes defined in the independent claims) because the reference implies that the abrasive feature can be any shape and the claimed shapes (base with at least three sides, etc.) are conventionally known abrasive feature shapes, as shown by the secondary reference, thus said shape is extremely obvious in view of the broad teachings defined by the primary reference (ANY SHAPE). Although the primary reference does not

Art Unit: 1755

explicitly teach that these shapes can have a positive rake angle, the reference does state that the preferred feature shapes (conical) have a positive rake angle to the base, thus it is the examiners position that one skilled in the art from reading the reference, as a whole, would understand that any alternative shapes can also include a positive rake angle. Assuming arguendo about this, the primary reference teaches in column 9, lines 55-56 a benefit of using a feature having a positive rake angle and it is the examiners position that this would provide the necessary motivation to produce the alternative shapes defined in column 11 having a positive rake angle to the base. With respect to the shape defined by claims 2, 5, 21 and the other claims corresponding to the same subject matter, the primary reference states that the features can be any convenient shape and this broadly reads on features having an angled top portion. In addition, the secondary reference states (combination with primary reference being obvious) that the feature can be a truncated pyramid and the broad interpretation of "truncated" encompasses an angled top, as long as said top is flat. With respect to the shape defined by claim 3 and the other claims corresponding to the same subject matter, this limitation is obvious because it is the examiners position that this limitation would have been obvious to the skilled artisan in order to assist in removing material from the workpiece. With respect to the shape defined by claim 4 and the other claims corresponding to the same subject matter, the primary reference teaches a positive rake angle and a feature with positive rake angle has a point outside the base perimeter absent evidence to the contrary. With respect to the undercut limitation, the primary reference teaches a positive rake angle and a feature with positive rake angle has a undercut section absent evidence to the contrary. With respect to the belt limitation, the primary reference defines an abrasive tool, in general, and the formation of this tool into a belt is clearly within the scope of the skilled

Art Unit: 1755

artisan because abrasive belts are conventional abrasive tools, as shown by the secondary reference. With respect to the abrading method, the primary reference defines an abrasive tool, in general, and the use of abrasive tools for abrading wood is clearly within the scope of the skilled artisan because abrasive tools are conventional used for this, as shown by the secondary reference. The limitations not addressed above are taught or implied by the references.

Claims 1, 4, 10, 16, 17, 18 and 25 are rejected under 35 U.S.C. 103(a) as obvious over Neff (099).

In addition to the teachings above, this reference teaches in column 3, lines 26-43 that the cones are asymmetrical (stacks, cones or elements having a generally triangular cross section). The cones are made from abrasive particles and an acrylic paint thereon (i.e. reads on abrasive particles and a binder)

The teaching of an asymmetrical cones **broadly** reads on cones that can have more than one side or surface and can encompass four sidewalls because if the cones are asymmetrical, sides can be broadly envisioned. In addition, unless the cones are perfect cones, the cones can have surfaces or sides absent evidence to the contrary **and** absent evidence showing the reference entails **perfect** cones. In view of the above, it is the examiner position that the broad interpretation of “cones” encompasses features that can have the claimed number of sides or surface and applicants have not clearly defined the shape in the claims (i.e. specific shapes are not defined). With respect to the shape defined by claim 4 and the other claims corresponding to the same subject matter, the primary reference teaches a positive rake angle and a feature with positive rake angle has a point outside the base perimeter absent evidence to the contrary. With

Art Unit: 1755

respect to the undercut limitation, the primary reference teaches a positive rake angle and a feature with positive rake angle has a undercut section absent evidence to the contrary. With respect to claim 25, the reference uses a magnetic tool to shape the features, thus reading on this claim.

Claims 2-3, 5, 11-15, 19-24 and 26-38 are rejected under 35 U.S.C. 103(a) as obvious over Neff (099) as applied to claims 1, 4, 10, 16, 17 and 18 above and further in view of Hoopman (097).

THIS IS AN ALTERNATIVE REJECTION TO THE FIRST REJECTION
DEFINES ABOVE.

With respect to the shape defined by claims 2, 5, 21 and the other claims corresponding to the same subject matter, the primary reference states that the features can be any convenient shape and this broadly reads on features having an angled top portion. In addition, the secondary reference states (combination with primary reference being obvious) that the feature can be a truncated pyramid and the broad interpretation of "truncated" encompasses an angled top, as long as said top is flat. With respect to the shape defined by claim 3 and the other claims corresponding to the same subject matter, this limitation is obvious because it is the examiners position that this limitation would have been obvious to the skilled artisan in order to assist in removing material from the workpiece. With respect to the belt limitation, the primary reference defines an abrasive tool, in general, and the formation of this tool into a belt is clearly within the scope of the skilled artisan because abrasive belts are conventional abrasive tools, as shown by the secondary reference. With respect to the abrading method, the primary reference defines an

Art Unit: 1755

abrasive tool, in general, and the use of abrasive tools for abrading wood is clearly within the scope of the skilled artisan because abrasive tools are conventionally used for this, as shown by the secondary reference. The limitations not addressed above are taught or implied by the references.

Claims 1-5 and 10-38 are rejected under 35 U.S.C. 103(a) as obvious over Hoopman (097) in view of Neff (099).

The primary reference fails to teach the positive rake angle of the composites. This limitation, however, is obvious to the skilled artisan because the secondary reference teaches that more aggressive rate removal applications require abrasive features with a positive rake angle to the base (i.e. the reference implies that a positive rake angle optimizes this application and provides a benefit of using a feature having a positive rake angle) and it is the examiner's position that this would provide the necessary motivation to produce the shapes defined by the primary reference having a positive rake angle. One reading the secondary reference would understand that composites can be made with a positive rake angle (to the base) if the application desired was aggressive removal. In view of the above, clear motivation for the combination is apparent. With respect to the shape defined by claims 2, 5, 21 and the other claims corresponding to the same subject matter, the primary reference states that the features can be any convenient shape and this broadly reads on features having an angled top portion. In addition, the reference states that the feature can be a truncated pyramid and the broad interpretation of "truncated" encompasses an angled top, as long as said top is flat. With respect to the shape defined by claim 3 and the other claims corresponding to the same subject matter, this limitation is obvious

Art Unit: 1755

because it is the examiners position that this limitation would have been obvious to the skilled artisan in order to assist in removing material from the workpiece. With respect to the shape defined by claim 4 and the other claims corresponding to the same subject matter, the combined teachings above make a positive rake angle obvious in the primary reference and a feature with positive rake angle has a point outside the base perimeter absent evidence to the contrary. With respect to the undercut limitation, the combined teachings above make a positive rake angle obvious in the primary reference and a feature with positive rake angle has an undercut section absent evidence to the contrary. With respect to the belt limitation and abrading method, the primary reference defines these. The limitations not addressed above are taught or implied by the references.

Applicant's arguments with respect to claims 1-5 and 10-38 have been considered but are moot in view of the new ground(s) of rejection.

Although a new ground of rejection has been made, the examiner will comment on the previous art applied.

Applicants argue Hoopman (097) alone, however, a new rejection has been applied using the art cited on the 1449 (no certification defined for this new reference). In view of this, any remarks with respect to Hoopman et al. alone are moot in view of the new rejections above.

For the rejection based on Bruxvoort, applicants appear to argue Hoopman (see page 17 of the response). Assuming that applicant means "Bruxvoort" they argue that the reference does not teach abrasive features having a positive rake angle. Although a positive rake angle is not literally defined, the side of the features (microstructure) are said to form an undercut portion,

Art Unit: 1755

thus this implies a positive rake angle. With respect to the abrasive limitation, the claims do **not** **define** that the feature **comprises** abrasive particles. The recitation of an abrasive feature, alone is not sufficient to establish that the features comprises abrasive particles because the feature is the same and it is the examiners position that the feature of the reference can act as an abrasive feature to an extent absent evidence to the contrary.

In view of the teachings as set forth above, it is the examiners position that the references reasonably teach or suggest the limitations of the rejected claims.

A reference is good not only for what it teaches but also for what one of ordinary skill might reasonably infer from the teachings. *In re Opprecht* 12 USPQ 2d 1235, 1236 (CAFC 1989); *In re Bode* USPQ 12; *In re Lamberti* 192 USPQ 278; *In re Bozek* 163 USPQ 545, 549 (CCPA 1969); *In re Van Mater* 144 USPQ 421; *In re Jacoby* 135 USPQ 317; *In re LeGrice* 133 USPQ 365; *In re Preda* 159 USPQ 342 (CCPA 1968). In addition, "A reference can be used for all it realistically teaches and is not limited to the disclosure in its preferred embodiments" See *In re Van Marter*, 144 USPQ 421.

A generic disclosure renders a claimed species prima facie obvious. *Ex parte George* 21 USPQ 2d 1057, 1060 (BPAI 1991); *In re Woodruff* 16 USPQ 2d 1934; *Merk & Co. v. Biocraft Lab. Inc.* 10 USPQ 2d 1843 (Fed. Cir. 1983); *In re Susi* 169 USPQ 423 (CCPA 1971).

Evidence of unexpected results must be clear and convincing. *In re Lohr* 137 USPQ 548. Evidence of unexpected results must be commensurate in scope with the subject matter claimed. *In re Linder* 173 USPQ 356.

Art Unit: 1755

The additional references cited on the 1449 have been reviewed by the examiner and are considered to be art of interest since they are cumulative to or less than the art relied upon in the above rejections.

Any foreign language documents submitted by applicant has been considered to the extent of the short explanation of significance, English abstract or English equivalent, if appropriate.

Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on 5/12/05 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609(B)(2)(i). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

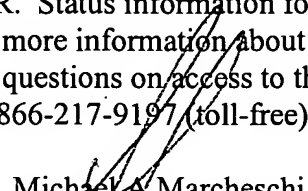
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Marcheschi whose telephone number is (571) 272-1374. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

Art Unit: 1755

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MM
8/05/04


Michael A. Marcheschi
Primary Examiner
Art Unit 1755